

PCT

10/076,540 PTO-892
WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁶: G06F 17/60, 157/00, H01J 1/00, H04M 11/00, H04N 1/21, H04Q 7/12, 7/00	A1	(11) International Publication Number: WO 00/48101 (43) International Publication Date: 17 August 2000 (17.08.00)
(21) International Application Number: PCT/US99/03118 (22) International Filing Date: 12 February 1999 (12.02.99) (71)(72) Applicant and Inventor: LUSK, Richard, Patrick [US/US]; 25 Los Monteros, Monarch Beach, CA 92629 (US).		(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). Published <i>With international search report.</i>
(54) Title: REAL-TIME TREND ANALYSIS SYSTEM (57) Abstract <p>A real-time trend analysis system utilizing at least one mathematical algorithm for the upload of information, the system comprising a means to compile substantially real-time data relating to a plurality of financial instruments tracked in successive substantially small increments of time. The system also comprises a means to display a name of each instrument tracked, a means to display a plurality of rankings of each instrument tracked, each ranking generally correlating to movement of each instrument tracked during said substantially small increments of time, the rankings comprising a relative strength of momentum tracked therewith, as well as a means to display multiple previous incremental rankings of each instrument tracked, and a means to display changes occurring in successive incremental rankings of each instrument tracked. Thus, the system provides for delivery of real-time trend analysis for instruments whose significant movements are of time-sensitive interest to users.</p>		

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	ES	Spain	LS	Lesotho	SI	Slovenia
AM	Armenia	FI	Finland	LT	Lithuania	SK	Slovakia
AT	Austria	FR	France	LU	Luxembourg	SN	Senegal
AU	Australia	GA	Gabon	LV	Latvia	SZ	Swaziland
AZ	Azerbaijan	GB	United Kingdom	MC	Monaco	TD	Chad
BA	Bosnia and Herzegovina	GE	Georgia	MD	Republic of Moldova	TG	Togo
BB	Barbados	GH	Ghana	MG	Madagascar	TJ	Tajikistan
BE	Belgium	GN	Guinea	MK	The former Yugoslav Republic of Macedonia	TM	Turkmenistan
BF	Burkina Faso	GR	Greece	ML	Mali	TR	Turkey
BG	Bulgaria	HU	Hungary	MN	Mongolia	TT	Trinidad and Tobago
BJ	Benin	IE	Ireland	MR	Mauritania	UA	Ukraine
BR	Brazil	IL	Israel	MW	Malawi	UG	Uganda
BY	Belarus	IS	Iceland	MX	Mexico	US	United States of America
CA	Canada	IT	Italy	NE	Niger	UZ	Uzbekistan
CF	Central African Republic	JP	Japan	NL	Netherlands	VN	Viet Nam
CG	Congo	KE	Kenya	NO	Norway	YU	Yugoslavia
CH	Switzerland	KG	Kyrgyzstan	NZ	New Zealand	ZW	Zimbabwe
CI	Côte d'Ivoire	KP	Democratic People's Republic of Korea	PL	Poland		
CM	Cameroon	KR	Republic of Korea	PT	Portugal		
CN	China	KZ	Kazakhstan	RO	Romania		
CU	Cuba	LC	Saint Lucia	RU	Russian Federation		
CZ	Czech Republic	LI	Liechtenstein	SD	Sudan		
DE	Germany	LK	Sri Lanka	SE	Sweden		
DK	Denmark	LR	Liberia	SG	Singapore		
EE	Estonia						

In The Application Of

RICHARD PATRICK LUSK

For A

REAL-TIME TREND ANALYSIS SYSTEM

Filed Pursuant to the Patent Cooperation Treaty

Receiving Office - United States Patent and Trademark Office

BACKGROUND OF THE INVENTION

Field of the Invention:

5 The present invention is a real-time trend analysis system. More particularly, the present invention is a system that utilizes algorithms for the upload of information to media such as an Internet site to accomplish delivery of realtime trend analysis for stocks, options, and futures, and currencies, hereinafter referred to as financial instruments, whose significant movements are of time-
10 sensitive interest particularly to persons who buy and sell instruments held only for short increments of time.

Description of the Prior Art:

Numerous innovations for information systems have been provided in the prior art that are described as follows. Even though these innovations may be
15 suitable for the specific individual purposes to which they address, they differ from the present invention as hereinafter contrasted. The following is a summary of those prior art patents most relevant to the invention at hand, as well a description outlining the differences between the present invention and the prior art.

20 In Patent Number 5,778,357, titled Market Information Machine, invented by Kolton, described is a computerized data retrieval system, especially for commodity price information databases, having a windowing system which aids a user in creating and revising formal search language queries, a database searching engine responsive to such queries, means to generate and format results
25 in both textual and graphic reports, and a capacity for echoing a formal search language query to a display in a near-natural language format for easy comprehension by the user as the query is constructed using the windowing system. The system has facilities for including domain knowledge in a query, such as market knowledge of calendar events, national holidays, triple-witching

5 hours, and option contract expiration dates. The system has additional facilities
that permit a user to include more fundamental domain knowledge, such as dates
of political elections, date of issuance and value of company earning reports, the
consumer price index, and so on. The near-natural language format of the query
10 may be created and revised either through the windowing system or with a text
editor.

 In Patent Number 5,761,442, titled Predictive Neural Network Means And
Method For Selecting A Portfolio Of Securities Wherein Each Network Has Been
Trained Using Data Relating To A Corresponding Security, invented by Barr, a
data processing system and method for selecting securities and constructing an
15 investment portfolio is based on a set of artificial neural networks which are
designed to model and track the performance of each security in a given capital
market and output a parameter which is related to the expected risk adjusted
return for the security. Each artificial neural network is trained using a number of
fundamental and price and volume history input parameters about the security and
20 the underlying index. The system combines the expected return/appreciation
potential data for each security via an optimization process to construct an
investment portfolio which satisfies predetermined aggregate statistics. The data
processing system receives input from the capital market and periodically
evaluates the performance of the investment portfolio, rebalancing it whenever
25 necessary to correct performance degradations.

 In Patent Number 5,633,918, titled Information Distribution System,
invented by Mankovitz, an information distribution system is a self-contained
automatic interface unit for connecting an information receiver such as a FAX
machine to an information and retrieval system on a predetermined schedule to
30 obtain a predetermined set of information selected by the user. Programming of
the interface unit by the user allows selection of schedule and information desired
from an updated database source such as a stock quotation reporting system.
Alteration of the selected times and desired information by the user through

5 reprogramming of the interface unit allows the user to obtain only the desired
information and allows autonomous operation of the information distribution
system. Connection of broadcast receiver system having a controller and an
information recording control allows access to additional information from
broadcast programs. Activation of the control stores time, date and station
10 information which is translated to a predetermined command for information
which is transmitted through an interface to the automatic interface unit.

In Patent Number 5,715,243, titled Information Service Provider For
Transmitting Multiple Rate Wireless Information, invented by May, an
information service provider is disclosed which transmits wireless information
15 having address data and message data. The information service provider, such as
a computer operatively coupled to a transmitter capable of transmitting wireless
information, transmits the wireless information to electronic devices such as
watch receivers, stand-alone pagers, palmtop computers with receiver cards, pen
based personal digital assistants, notebook computers, and the like. The
20 information service provider sets a encoding rate to be an address rate, then
transmits the address data of the electronic device(s) for which the message is
intended at the address rate. The information service provider then adjusts the
encoding rate to be a message rate different than the address rate, where the
message rate corresponds to the address. This technique allows the information
25 service provider to transmit, and the electronic device to process, different types
of messages at different rates. This would allow, for example, long complex
messages, such as news broadcasts, to be transmitted at a slower rate than shorter,
less complex messages, such as personal pages and stock quotes, thereby
decreasing the transmission errors of the long complex messages to a number
30 capable of being corrected in a manner transparent to the user.

In Patent Number 5,793,497, titled Method And Apparatus For Delivering
And Modifying Information Electronically. invented by Funk, described is an
automated system of passively distributing personalized, unique information to

5 users via electronic mail or facsimile. The system formats information into
messages conforming to electronic mail protocols and transmits these messages
to the user's electronic mailbox or reception system. The system also allows a
user to automatically edit an underlying information database via electronic mail
to modify services and further allows third parties to insert text messages into
10 outbound messages.

 In Patent Number 5,801,698, titled Dynamic Information Display During
Busy Cycle Of A Processing System, invented by Lection, methods, systems and
program products are provided which provide dynamic status to a user during the
busy cycle of a processing system. The status information may be provided by
15 displaying information to a user of a computer system during performance of an
application program on the computer system by formatting the busy cursor to
provide dynamic information which is unrelated to the application program in the
computer system to the user during the display of the busy cursor. The dynamic
information to be displayed to the user may be obtained from a source other than
20 the application program on the computer system. The obtained dynamic
information would then be used to format the busy cursor to provide the dynamic
information to the user. Multiple information sources may also be utilized and the
information display prioritized by a user.

 In Patent Number 5,857,181, titled Broadcast Interactive Multimedia
25 System, invented by Augenbraun, disclosed is a procedure for selecting and
storing data elements communicated from a common database to users of the
database utilizing a communication link between each transmitter and a
concomitant receiver accessible by the user. The transmitted information is
augmented with attributes which are used at the receiver to select and then store
30 locally only that information of interest to each receiver's user, wherein the
attributes and the user selection pattern determine the criteria for storing
information locally. Attributes include: utility of each data element in time;
interest categories and level of interest for each of the categories determined for
the collective users; repeat time to the data element; and a hyperlink to associated

5 data elements.

As outlined above, the prior art patents that relate to transfer of stock information via electronic means largely entail differing elements than those described herein. One such invention allows for automatic direct electronic mail to be sent to users with data on particular securities in pre-determined time
10 increments, such as following each day's market closing. Another such invention allows for automatic facsimile transmissions to users containing data on particular securities in pre-determined time increments, such as following each day's market closing. Still another patent teaches the usage of automatic pager transmissions to users containing stock prices and volume information. Finally,
15 multiple inventions teach the usage of improved Internet search engines that are particularly designed for security information retrieval in response to user-entered queries.

In contrast, as described in greater detail herein, the present invention utilizes mathematical algorithms to detect short term and intraday price
20 movements in financial instruments, consisting primarily of very time-sensitive information such as "Breakaway" movements occurring over a period of only moments, hours, or days. Accordingly, the present invention uniquely displays the name of the instruments tracked in small increments of time, the ranking of such instruments by relative strength of momentum tracked, the previous
25 incremental rankings, and any changes in such occurring during subsequent increments.

Therefore, the principal distinguishing feature found in the present invention is that the system continuously and dynamically monitors all such securities. As the momentum, beta, volume, and volatility of a particular
30 financial instrument is of supreme importance to the trader, the present invention allows such to be monitored in real-time, with postings in increments as small as several seconds. The system further uniquely functions to sort large quantities of data gathered, for the benefit of the user, including, but not limited to searching

- 5 message boards for relevant news, and compiling information regarding corporate mergers, stock splits, corporate takeovers, and investor speculation and sentiment.

SUMMARY OF THE INVENTION

10 Tremendous developments in Internet and computer-based securities trading have recently revolutionized the world of investing, breaking geographic boundaries and creating opportunities for both individual and institutional investors that were previously unattainable by those not present on the trading floors. Upon information and belief, online investing accounts now total greater than five million, with many analysts predicting fourteen million of such accounts
15 by the year 2002. Global investment in United States securities is following suit, with foreign purchases tripling from four trillion dollars in 1990 to over twelve trillion dollars in 1997. Indeed, a strengthening movement towards globalization of the security marketplace is taking place, including the demand for non-traditional investment products such as options and futures.

20 Regarding the utility and necessity of a system such as the present invention, computers and greatly enhanced networking capabilities have contributed to a growing democratization of financial information. Whereas in previous years relatively few large brokerage firms held a great quantity of financial information, the current trend is for the media such as the Internet to act
25 as its own information highway for the dissemination and publication of breaking financial news. Indeed, so a great deal of information is currently being disseminated that investors need an online financial community to help them sort through and evaluate such information. In addition, investors' expectations in their securities trading system include value, efficiency, low trading commissions,
30 and liquidity.

5 Greater than five million active online accounts administer greater than two hundred billion dollars in assets. With such in mind, the system of the present invention is uniquely suited to respond to the emerging market opportunity developing within the trading community as it appeals to one of the highest growth segments within the market — the “daytrader.”

10 The daytrader typically seeks to capitalize on short-term, intraday price movements, or volatility, of stocks, options, currencies, and futures. The daytrader may enter and exit trades dozens of times over the course of only minutes or hours, but will always seek to exit all trades by the close of the market. With a minimum amount of capital, small investors can also easily and relatively
15 inexpensively buy and sell securities practically anytime and anywhere.

 The daytrader spends his trading days and after-market hours searching for news or speculation on which to capitalize at least one trading opportunity. Thus, the daytrader watches or tracks as many companies as will fit on his real-time quote machine, and sifts through multiple online financial sites to gather
20 such voluminous information. In addition, the daytrader typically views substantially well-known broadcast television channels and various news services in an effort to compile, in a piece-meal manner, as much time-sensitive information as possible. Finally, the daytrader searches through on-line message boards, magazines, newspapers, research reports, Securities and Exchange
25 Commission filings, charts, and any other source of information that will provide a trading edge.

 The principal objective of the daytrader is to enter a trade before most other traders can and to exit the trade at about the time most other traders discover the trading opportunity or the speculative news or information upon which the
30 categorization of trading opportunity is based. Although the above-mentioned research means are useful, efforts expended are invariably time consuming and often overwhelming for the daytrader, as the sheer volume of available data hinders the daytrader’s ability to extract meaningful information quickly.

5 Thus, the present invention solves a particular need, as the system described
herein provides a unique trend analysis and alert system. The system consolidates
the aforementioned offerings into a single comprehensive portal bringing the
daytrader into the system's online financial community. The community tracks
all data, including companies identified by the user in particular, with preferences
10 established by the user. The system then searches for the user and alerts the
daytrader on a small time incremental basis regarding all relevant changing
market conditions.

 More particularly, the algorithm and Internet web site delivery system
described herein accomplishes delivery of real-time trend analysis for stocks,
15 options, currencies, and futures whose significant movements are of time-
sensitive interest to the system's visitors: daytraders, momentum traders, and
position traders.

 The system identifies, sorts, analyzes, and updates, on a real-time basis, a
list of stocks, options, currencies, and futures whose immediate trading
20 characteristics are "breaking out" of usual trade patterns, moving perhaps
violently to the up-side or down-side. Accordingly, the system is to be utilized
by visitors to identify immediate trading opportunities that can be optimized in
a real-time fashion.

 The system further functions to watch or track all breaking financial trends,
25 to analyze customer-defined relevance with respect to the end user's
individualized investment portfolio or prospective portfolio, and publish this
information, preferably on the Internet, in real-time, preferably every fifteen
seconds throughout the course of a given trading session.

 Additional contents provided by the system include breaking news,
30 Securities and Exchange Commission filings, insider buying and/or selling
disclosures, "forward-look" momentum projections, editorial publications,
educational information, mock trading capability for risk-free training in real-time

5 trading of options, futures, currencies, and stocks, electronic mail for members,
a means to track rumors and alerts concerning implied volatility spikes for
options, and message board services. Importantly, the system, upon compilation
of such data, can provide editorial analyses, including speculation on why various
10 financial instruments are trending in particular directions and the time at which
potential reversal of such trends is likely to occur.

Furthermore, the system may provide investors' sentiment polls and
opinions for the benefit of the user. In such an instance, such sentiments may
relate to the broader markets as a whole, the impact of foreign political and
economic developments upon local interests, and projected target prices for a
15 myriad of options, stocks, futures, currencies, and other securities. In such
regard, the system will be greatly informative to users during all hours of the day
and evening, as at least several foreign markets around the globe will be open at
all times.

It should be noted that even after the close of the trading session, the system
20 provides helpful and informative data to the user on a variety of topics.
Importantly, the system will function to examine historic volatility, comparing
such to implied real-time volatility. Therefore, any "spikes" in volatility or
volume will be conveniently accented for the benefit of the user, who will desire
such information for prospective purchase or sale of such financial instrument or
25 those related to in the near future. In further description of historic volatility
information, the system will track what particular securities have done in a
previous increment of time, display the moving average of each instrument, and
whether, in consideration of prior increments, such financial instruments are
currently accelerating, decelerating, or are substantially stable or flat.

30 In addition, the system provides for forums available to users, such forums
allowing traders to communicate with one another regarding all security matters.
Moreover, a significant section displaying investors' sentiments on particular
financial instruments and broader concerns is at all times available for the user

5 to consult. Also included for post-close access are various quotes, data relating to mercantile exchanges, data relating to activity in foreign markets, including currency trading and trends, and a virtual store for the purchase of a host of items.

10 In summation, the system will detect short term and intraday price movements in stocks, options, currencies, and futures, consisting primarily of time-sensitive data such as "breakaway" movements occurring over a period of moments, "daypart" movements occurring over a period of hours or over a full trading day, and "long term" trends occurring over a period of days, weeks, months, quarters, or years.

15 The novel features which are considered characteristic for the invention are set forth in the appended claims. The invention itself, however, both as to its construction and its method of operation, together with additional objects and advantages thereof, will be best understood from the following description of the embodiments when read and understood in connection with accompanying drawings.

20 **DETAILED DESCRIPTION OF THE
PREFERRED EMBODIMENT**

As previously noted, the present invention uses mathematical algorithms for the upload of information to media such as an Internet website to accomplish delivery of real-time trend analysis for stocks, options, futures, and currencies whose significant movements are of time-sensitive interest to persons who buy and sell financial instruments held only seconds, minutes, or hours at a time. A mainframe computer system provides uploads to an Internet website for real-time downloading to all visitors. Specifically, mathematical algorithms detect short term and intraday price movements in financial instruments, consisting primarily of time-sensitive data such as "Breakaway" movements occurring over a period of moments, "Daypart" movements occurring over a period of hours or a full trading day, and "Long term" trends occurring over a period of days, weeks,

25
30

5 months, quarters, or years.

To accomplish such purposes, the present invention utilizes a first mathematical formula to track and display those financial instruments moving at the fastest rates, in the smallest increments of time. A second formula, less mathematically sensitive, is utilized to track and display those financial instruments trending generally in a particular direction, even absent tremendous movement in a previous short increment.

These uploads consist of elements comprising the ranking of instruments by relative strength of momentum tracked, previous ranking and any change thereto, the name of the instrument, the last trade information, the amount of change over previous close, the current bid and ask, the time the alert was posted in small increments, time elapsed since the instrument was posted on "alert status", whether the trend is increasing, flat, or decreasing, percentage of change and amount of change in price from time of the alert, the real-time implied proportional value as compared to historical proportional value for instruments expressed as a percentage of change as compared to a real-time index expressed as a percentage of change, the real-time implied volatility as compared to historical volatility for instruments expressed as a percentage of change, the real-time trading range as compared to historical trading range for instruments expressed as a percentage of change.

To accomplish the above, a mainframe computer system provides uploads to an Internet website for substantially real-time-type downloading to the website's visitors, often daytraders. In the preferred mode, such will be provided in fifteen second increments functioning as real-time "push" technology data streams.

Next, based upon the above, mathematical algorithms detect the real-time volume as compared to historical volume for instruments expressed as a percentage of change. In such a context, the short term movements in volume may comprise several minutes of time.

5 In all such instances, this information will consist of a variety of time-sensitive data. Primarily, movements in selected financial instruments which may occur over a period of only several moments, will be tracked, such movements described herein as "Breakaway"-type movements. Moreover, the system will track movements which may occur over a period of several hours or over a full trading day, described herein as "Daypart"-type movements. Next, the system will track trends which may occur over a period of days, weeks, months, quarters, described herein as "Long term" trends.

15 In all such instances, the aforementioned uploads also comprise a variety of information in connection with the name of the instrument in question. Principal among such categorical data is the ranking of instruments by relative strength of the momentum being tracked, in real-time, by said algorithms. Importantly, the system displays the previous ranking of each selected instrument and any change in such.

20 In addition, the system displays information in connection with the last trade recorded for each instrument and whether such was categorized as an "uptick" or "downtick" in movement. The current "bid" and "ask" recorded for the instrument in question will also be provided.

25 Importantly, the system displays the time of an "alert" posted for each selected instrument, such alerts displayed in quarter-minute increments in the preferred embodiment. The precise quantity of time that has elapsed since the instrument was posted on "alert status" is also provided for the convenience of the user. Although in the preferred mode such alert status list comprises the twenty most trending instruments tracked, it shall be understood that alternate pre-determined quantities of instruments tracked may appear on the alert status list.

30

5 Of paramount importance to the present invention is the fact that such
conveniently displayed information on whether the aforementioned trend of
movement is categorized as increasing, flat, or decreasing. Specifically, the
percentage of change and the amount of the change in the financial instruments'
price from the time of the posted alert, expressed as either a number, a
10 percentage, or chart exhibiting both, is clearly illustrated. Furthermore, in an
effort to place the movement of a particular instrument in proper context, the
system displays the proportionate value of said instrument as compared to the
movement of established indices.

15 With respect to options, the system also identifies "implied volatility spikes",
or immediate changes over the historical volatility of the option price, expressed
in percentages in the preferred mode, all in real-time.

20 Moreover, with regards to longer incremental movement of the instrument, the
system displays the amount of the change recorded over previous session closing
information, exhibiting positive or negative movement therewith. Furthermore,
an index is published on the last day of each month indicating financial
instruments which have trended both highest and lowest the most significantly
during the previous month period.

25 The algorithm searches the entire universe of financial instruments and
examines, preferably within a time period of fewer than fifteen seconds, precisely
what has occurred since the last posting of the system's information stream. Such
functions to allow the system to address a group of trends of movement, the
groups comprising whether the financial instrument has gapped up or down,
whether trading volume has increased or decreased, whether the financial
instrument is breaking away from its historical trading range, whether the
30 financial instrument is above or below its moving average, whether the financial
instrument's momentum is increasing or decreasing, whether breaking news is
available regarding that financial instrument, and whether the financial instrument
is trending to a violent breakaway up or down in price.

5 A watchlist system identifies those financial instruments whose most recent price exceeds its user-defined trading range. When a technical breakout or spike occurs, the event usually indicates that the price of the financial instrument will move either higher or lower, thereby creating a short-term opportunity which the system allows the trader to optimize.

10 The result of the system's ongoing analysis and dynamic resorting of raw data, thus converting the data into information for use by the system's users, will be displayed under a group of major classifications, the group comprising stocks, options, futures, and currencies.

15 Within each of these four major classifications the system provides time-sensitive information concerning a group of characteristics, the group comprising a pre-determined quantity of top securities breaking away upwardly or downwardly in an explosive manner, a pre-determined quantity of top securities trending higher, a pre-determined quantity of top securities trending lower, a pre-determined quantity of top securities exhibiting implied volatility spikes, and a
20 pre-determined quantity of top securities appearing on a user-defined watch list.

 The system functions to allow the daytrader to click on any financial instrument listed within any sub-classification for more in-depth, security-specific information. Data on stock, futures, currencies, and options will be sent in real-time, with analytical components updated in small successive increments,
25 preferably every fifteen seconds. Analytical components that are updated during each successive increment comprise the dynamic analysis of speed, or the pace at which a market is rising or falling, the depth, or the number of units of financial instruments offered to willing buyers from sellers and/or units of financial instruments offered from sellers to buyers, the volume, or the number of units of
30 financial instruments that were traded in the last fifteen seconds, the momentum, or whether the financial instrument is gaining or losing speed, moving averages, forward-looking momentum projections, and percentage change from the time the alert was originally posted and the time elapses since posting.

5 The present invention also provides a means for a user to enter multiple financial instruments in a specialized section of the display, for watching or tracking of the user's own current or prospective portfolio. Application of these components to the daytrader's own personalized portfolio functions to allow the daytrader to make better market entry and exit decisions than would otherwise be
10 realizable absent such a financial information management system. This feature, as combined with the sorting and incremental watching features noted above, will provide unparalleled convenience to the daytrader.

 Specifically, the daytrader will use this information to spot the beginning of a trend and exit the trade at the first sign of trend reversal. The system provides
15 a plurality of links to the trader's online broker to facilitate execution and immediate confirmation of the trade in seconds.

 The system further functions to allow traders to customize their watch lists with preferences as to chart type, moving average time view, percentage increases or decreases preferred prior to receiving an alert, and other preferences.
20 Momentum indicators will identify the strength of the trend and when a quick reversal is about to occur in volatile markets, in a manner substantially more effective than charted price data known in the prior art.

 In the preferred mode, the system further provides a projection of when a pending reversal point is likely to occur, based on prior performance documented
25 by the system. The system further monitors and reports on breaking news, rumors, and alerts concerning stocks, options, futures, currencies, corporate announcements, takeover bids, stock splits, and other information that might affect financial instruments prices in a dramatic manner.

 In any such instance, the list of most trending financial instruments will
30 provide a means for the user to directly link from the list generated by the system to a separate display for each particular financial instrument shown, much to the benefit of the user.

5 Finally, for those who wish to learn how to daytrade, the system's "virtual daytrading" pages will allow new customers to practice daytrading principles without risking loss of actual funds.

10 It will be understood that each of the elements described above, or two or more together, may also find a useful application in other types of constructions differing from the type described above. For instance, although the primary embodiment intended for the present invention is manifested in an Internet website, it shall be understood that the system, in its claimed features and functionality, may transmit
15 data, information, and analysis to users via a means selected from the group consisting of television broadcast means, cable broadcast means, radio broadcast means, telephonic means, facsimile means, and pager means.

20 While the invention has been illustrated and described as embodied, it is not intended to be limited to the details shown, since it will be understood that various omissions, modifications, substitutions and changes in the forms and details of the device illustrated and in its operation can be made by those skilled in the art without departing in any way from the spirit of the invention.

25 Without further analysis, the foregoing will so fully reveal the gist of the present invention that others can, by applying current knowledge, readily adapt it for various applications without omitting features that, from the standpoint of prior art, constitute essential characteristics of the generic or specific aspects of this invention.

 What is claimed as new and desired to be protected by Letters Patent is set forth in the appended claims.

5 **WHAT IS CLAIMED IS:**

1. A real-time trend analysis system utilizing at least one mathematical algorithm for the upload of information, the system comprising:

10 A. a means to compile substantially real-time data relating to a plurality of financial instruments tracked in successive substantially small increments of time and to convert said data to user information;

B. a means to display a name of each instrument tracked;

15 C. a means to display a plurality of rankings of each instrument tracked, each ranking generally correlating to movement of each instrument tracked during said substantially small increments of time, the rankings comprising a relative strength of momentum tracked therewith;

D. a means to display multiple previous incremental rankings of each instrument tracked; and

20 E. a means to display changes occurring in successive incremental rankings of each instrument tracked, the system providing delivery of real-time trend analysis for instruments whose significant movements are of time-sensitive interest to users.

2. The real-time trend analysis system as described in claim 1, wherein the instruments are monitored in real-time, information regarding said instruments disseminated in increments of fifteen seconds.

25 3. The real-time trend analysis system as described in claim 1, wherein the systems displays sentiment polls and opinions of pre-determined investors.

5 4. The real-time trend analysis system as described in claim 1, wherein the system provides forums available to users, said forums allowing users to communicate with one another regarding security matters.

 5. The real-time trend analysis system as described in claim 1, wherein the system functions to allow users to access at least one instrument displayed,
10 functioning to provide a separate display of additional information relating to said instrument.

 6. The real-time trend analysis system as described in claim 1, wherein the system provides a plurality of projections, each projection displaying information selected from the group consisting of text, charts, and graphs, said information
15 relating to a likely pending reversal point in the movement of an instrument, each projection founded upon previous performance of said instrument as documented by the system.

 7. The real-time trend analysis system as described in claim 1, wherein the system comprises at least one virtual daytrading page, each virtual daytrading
20 page functioning to provide a means for new users to practice daytrading principles absent a risk of loss of funds.

 8. The real-time trend analysis system as described in claim 1, wherein the system comprises a means for users to enter a plurality of instruments in a specialized section of the system, the specialized section functioning to allow
25 users to track instruments of interest to said users in a manner selected by said users.

 9. The real-time trend analysis system as described in claim 1, wherein the system further displays information selected from the group consisting of breaking news, insider buying and selling disclosures, forward-look momentum
30 projections, editorial publications, educational information, investor sentiment, and Securities and Exchange Commission filings.

5 10. The real-time trend analysis system as described in claim 1, wherein
the instruments are selected from the group comprising stocks, options, futures,
and currencies.

10 11. The real-time trend analysis system as described in claim 1, wherein
the system monitors all financial data, and provides time-sensitive information
selected from the group consisting of a pre-determined quantity of top securities
breaking away upwardly or downwardly, a pre-determined quantity of top
securities trending higher, a pre-determined quantity of top securities trending
lower, a pre-determined quantity of top securities exhibiting implied volatility
spikes, a pre-determined quantity of top securities exhibiting implied volume
15 spikes, a pre-determined quantity of top securities exhibiting implied beta spikes,
the historic trading range of a pre-determined quantity of securities, and a pre-
determined quantity of top securities appearing on a user-defined watch list.

 12. The real-time trend analysis system as described in claim 1, wherein
the system provides a means for users to utilize electronic mail services.

20 13. The real-time trend analysis system as described in claim 1, wherein
the system provides a means for tracking rumors and alerts concerning implied
volatility spikes for financial instruments, and a matrix examining said rumors
and alerts, functioning to allow for posting of information of a generally editorial
nature to the benefit of the user.

25 14. The real-time trend analysis system as described in claim 1, wherein
the system provides a means to examine historic volatility, functioning to
compare said historic volatility to current implied volatility, functioning to allow
for posting of information of a generally editorial nature to the benefit of the user.

5 15. The real-time trend analysis system as described in claim 1, wherein
the system displays the amount of a change in price of an instrument recorded
over previous session closing information, displaying positive and negative
movement in connection therewith.

10 16. The real-time trend analysis system as described in claim 1, wherein
the system comprises a watchlist that functions to identify previously determined
securities whose most recent price exceeds a user-defined trading range, further
functioning to indicate a trend of movement therewith.

15 17. The real-time trend analysis system as described in claim 1, wherein
the system displays the time of an alert posted for each instrument selected, each
alert displayed in substantially small increments of time.

 18. The real-time trend analysis system as described in claim 1, wherein
the alert status list comprises the twenty most trending instruments tracked.

20 19. The real-time trend analysis system as described in claim 1, wherein
the uploaded information is selected from the group consisting of the ranking of
instruments by movement of price, relative strength of momentum tracked,
previous ranking and any change thereto, the last trade information, the current
bid and ask of each instrument, the time of alert in small increments, time elapsed
since the instrument was posted on alert status, whether the trend is increasing,
whether the trend is flat, whether the trend is decreasing, and a percentage of
25 change and amount of change in price from time of the alert.

 20. The real-time trend analysis system as described in claim 1, wherein
a matrix examines all uploaded data, functioning to allow the system to post
information of a generally editorial nature, said information selected from a group
consisting of text, charts, and graphs, said information exhibiting conjecture
30 relating to present and future activity of a plurality of financial instruments.

5 21. The real-time trend analysis system as described in claim 20, wherein
a matrix examines the historical beta of financial instruments as compared to
implied beta of said financial instruments.

 22. The real-time trend analysis system as described in claim 20, wherein
a matrix examines the historical volume of financial instruments as compared to
10 current volume of said financial instruments.

 23. The real-time trend analysis system as described in claim 20, wherein
a matrix examines a pre-determined quantity of financial trades, functioning to
determine positive and negative sentiments regarding the status of said
instruments.

15 24. The real-time trend analysis system as described in claim 1, wherein
uploaded data, information, and analysis are transmitted to the user via a means
selected from the group consisting of television broadcast means, cable broadcast
means, satellite transmission means, radio broadcast means, telephonic means,
teletype means, facsimile means, and pager means.

20 25. The real-time trend analysis system as described in claim 1, wherein
a matrix examines a real-time implied proportional value as compared to
historical proportional value for instruments expressed as a percentage of change
as compared to a real-time index expressed as a percentage of change.

 26. The real-time trend analysis system as described in claim 1, wherein
25 a matrix examines a real-time implied volatility as compared to historical
volatility for instruments expressed as a percentage of change.

 27. The real-time trend analysis system as described in claim 1, wherein
a matrix examines a real-time trading range as compared to historical trading
range for instruments expressed as a percentage of change.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US99/03118

A. CLASSIFICATION OF SUBJECT MATTER

IPC(6) : Please See Extra Sheet.

US CL : 705/37, 10, 36; 340/825.44; 358/402; 379/93.24; 455/31.2

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 705/37, 10, 36; 340/825.44; 358/402; 379/93.24; 455/31.2

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

Please See Extra Sheet.

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 4,980,826 A (WAGNER) 25 December 1990, col. 3, lines 35-, col. 4, lines 1-13.	4
A	US 5,761,442 A (BARR ET AL) 02 June 1998, col. 3, lines 63-, col. 4, lines 1-19.	1-27
A	US 5,101,353 A (LUPIEN ET AL) 31 March 1992, col. 7, lines 47-59	1-27
A	US 5,838,252 A (KIKINIS) 17 November 1998, col. 2, lines 9-30.	1-27
A	US 5,793,497 A (FUNK) 11 August 1998, col. 6-67.	1-27
A	US 5,633,918 A (MANKOVITZ) 27 May 1997, col. 3, lines 42-64.	1-27

☒ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

* Special categories of cited documents:	*T	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
A document defining the general state of the art which is not considered to be of particular relevance	*X*	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
B earlier document published on or after the international filing date	*Y*	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
L document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	*A*	document member of the same patent family
O document referring to an oral disclosure, use, exhibition or other means		
P document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search

14 JULY 1999

Date of mailing of the international search report

18 AUG 1999

Name and mailing address of the ISA/US
Commissioner of Patents and Trademarks
Box PCT
Washington, D.C. 20231

Facsimile No. (703) 305-3230

Authorized officer

TODD VOELTZ

Telephone No. (703) 305-2200

Joni Hill

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US99/03118

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 4,922,518 A (GORDON et al) 01 May 1990, col. 2, lines 25-50.	1-27

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US99/03118

A. CLASSIFICATION OF SUBJECT MATTER:

IPC (7):

G06F 17/60, 157:00; H01J 1/00; H04M 11/00; H04N 1/21; H04Q 7/12, 7/00

B. FIELDS SEARCHED

Electronic data bases consulted (Name of data base and where practicable terms used):

APS

REAL-TIME, DYNAMICALLY, RANKINGS, FINANCIAL INSTRUMENTS, MOVEMENT, DELIVERY,
MARKET ANALYSIS, TRENDS, DIRECTION, APPROACH, RATINGS, OUTPUTING.